

Serial No. 10/673,484

Docket No.: 300.1132

REMARKS

In accordance with the foregoing, claims 1, 4 and 5 have been amended. Claim 2 is incorporated into claim 4 and otherwise has been cancelled. Claims 1 and 3-7 are pending and under consideration.

STATUS OF CLAIMS

Claim 6 is allowed.

Claims 1-3 are rejected.

Claims 4 and 5 are objected to but are indicated to be allowable is suitably rewritten into independent form.

ITEM 3: REJECTION OF CLAIMS 1-3 FOR OBVIOUSNESS UNDER 35 U.S.C. 103 (a) OVER FIGUEROA et al. (USP '317) TAKEN WITH ADAE-AMOAKOH et al. (USP '012)

The rejection is respectfully traversed.

The thin-film capacitor having the structure recited in claim 1 comprises a dielectric film region and a metal film region made into a metal film formed on the lower electrode and sectioned by selective anodic oxidation, and a third conductor provided on the metal film region.

In contrast, as described in column 8, lines 35 to 38 of reference "Figueroa", "In one embodiment, dielectric layer 1202 contains a metal oxide, such as tantalum oxide (Ta_2O_5). The metal oxide may be formed using a physical vapor deposition technique of the metal". Accordingly, the metal oxide provided in the hybrid capacitor of "Figueroa" differs from the dielectric film region provided in the thin-film capacitor of the present invention. Furthermore, the hybrid capacitor of "Figueroa" does not have the third conductor provided on the metal film region of the metal in which the dielectric film region is not formed by selective anodic oxidation.

Additionally, it is described in column 4, lines 16 to 23 of "Adae-Amoakoh", that "... oxide layers 19 and 19' are formed on the entire exposed, opposing surfaces of layers 17 and 17', including on the now thickened sidewalls of the holes 13 and 15. Formation of these oxide layers is preferably achieved by a conversion process, the preferred one of use in the instant invention being anodization. During this procedure, deposited electrical conductive layers 17 and 17' are converted to metal oxide dielectric layers in an electric cell ...".

Accordingly, the metal oxide dielectric layers 19 and 19' of the capacitor described in "Adae-Amoakoh" differ from the dielectric film region formed by selective anodic oxidation of a metal film formed on the lower electrode in the thin-film capacitor device of the present invention. Furthermore, the capacitor of "Adae-Amoakoh" does not have the third conductor provided on

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the metal film region of the metal in which the dielectric film region is not formed by selective anodic oxidation.

Therefore, it is respectfully submitted that the present invention, as claimed, differs patentably from the disclosures of "Figuerora" and "Adae-Amoakoh".

LACK OF PRIMA FACIE DEMONSTRATION OF OBVIOUSNESS OF THE COMBINATION OF FIGUERORA AND ADAE-AMOAKOH

At page 3, the Action concedes that Figuerora lacks any teaching of "providing electrode pads on the conductors whereas Adae-Amoakoh discloses the provisions of solder balls teaches the formation of solder balls 55 on electrode pads 33'." The Action then asserts that it would have been obvious to have modified the capacitor of Figuerora by forming the electrode pad on each of the first and second conductors of Adae-Amoakoh. The Action specifically asserts:

"This is because of the desirability to provide the pads for forming solder balls thereon so that it is facilitating...easy bonding of the capacitor to circuit board through the solder balls formed on the electrode pads."

(Action at page 3, third full paragraph)

Correcting the citation to Adae-Amoakoh somewhat, the "outer conductors 33 and 33' on both opposing sides of the structure serve as connecting pads which are then connected to corresponding pads 52...on boards 51 and 53...[by]...solder balls 55...." (column 7, lines 1-7).

It is altogether unclear, however, how the teaching of solder balls 55 in Adae-Amoakoh relates to overcoming the admitted deficiencies of Figuerora.

It is respectfully submitted that the Action fails to identify any motivation to modify the structure of Figuerora in accordance with the alleged teaching of Adae-Amoakoh cited at page 3, the second full paragraph. On the other hand, Figuerora discloses attaching discrete capacitors 2202 and a die 2204 to exposed portions of bottom and top conductive layers 1304 and 1702 at the top of the package. (Column 11, lines 11-25). In that context, there is no apparent need whatsoever to combine Adae-Amoakoh with Figuerora, which already has a technique for connecting elements to the exposed conductive portions at a common (upper) surface of the dielectric layer structure – defeating any possible basis for the proposed combination of the two references. Clearly, no showing satisfying the stringent standards of MPEP 2143-2143.03 has been made in the Action.

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CONCLUSION

In accordance with the foregoing, it is submitted that the claims patentably distinguish over the references of record taken singularly or in any proper combination and, there being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

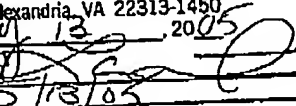
Date: May 13, 2005By: 

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